Correlations among Conservation Laws, Homeostasis, and the Activation of Dopamine Neurons

By. Stephen Lowell Takowsky

MANY PEOPLE BELIEVE LIFE IS NOT FAIR.

WHAT IF WE HAVE BEEN ASSESSING THE FAIRNESS OF LIFE INCORRECTLY?

People tend to compare their lives to the lives of others to gauge fairness. Unfortunately, that rarely if ever produces an accurate point of reference. People may appear to have the world at their feet, and outsiders may view these people with envy. However, what do outsiders truly know about what other people have gone through in the past, or more to the point…what is in store for them in their future?

In reality, we do not have enough insight into another's life to make an accurate assessment on the overall fairness of life. People form opinions about the lives of others with only part of the information. This less than satisfactory amount of information leads outsiders to the belief that some people are luckier than others, and that life is not fair. Ultimately, assumptions are what lead outsiders to the conclusion that some people end their lives having experienced more pleasure and happiness than pain and sadness.

You may fantasize about the happiness you would experience if you were a billionaire, but do you know the real cost of this happiness?

Is it plausible that life is fair?

Yes, but you are going to need an open mind and about 20 minutes.

Proceed to the next page if you have both.

There is a system in the brain that spreads a neurotransmitter called dopamine to a range of brain areas. The output of this system—measured as activation of dopamine neurons—is believed to correspond to a reward signal. The activity of dopamine neurons does not increase when a positive input that was expected is presented, but only on the occurrence of a positive input that was not expected. What this means is that when you receive something positive that you were expecting (think of your paycheck), there is no dopamine signal. However, if you are suddenly informed you will receive a raise, this should generate a positive reward signal; and if you suddenly lose your job or receive a cut in pay, this should generate a negative reward signal. Usually laboratory rats will work to the point of starvation just to receive artificial electrical stimulation of the dopamine neurons. Cocaine acts on the reward system, and so there is reason to believe that the positive rush people experience on taking cocaine is an emotional signal. This rush can be followed by a dip in emotional state; and overstimulation of the dopamine system can lead to strong negative after-effects. The usual explanation for this is that there are systems in the brain that try to keep the dopamine neurons' activation in balance. When neurons are over stimulated, these balancing systems activate; this leads to an overshoot after the stimulation has been withdrawn.

There are natural biological forces at work that tend to create emotional balance. What if this emotional balance played a key part in guaranteeing something truly beyond our wildest imagination? What if regardless of how much pleasure a person experiences from money, power, and beauty, at some point they will experience an equal ratio of pain before the death of their mind?! If something guaranteed feeling neutrality at death, to what extent is the role of these biological forces? Can we test to see if there are truly “happy people” or “sad people” out there?

I hate to ask so much of you, but you are also going to need to be willing to accept that feelings can be reduced to some quantifiable unit(s) and something is using this quantified data to guarantee the fairness of life!

Now, I understand that this is a tall glass to swallow. Considering mainstream neuroscience currently proposes a complexity far beyond something that can seemingly be quantified to basic units. However, if the day comes and we find ourselves staring in the face of a way to quantify feelings, then I hope this book will be helpful.

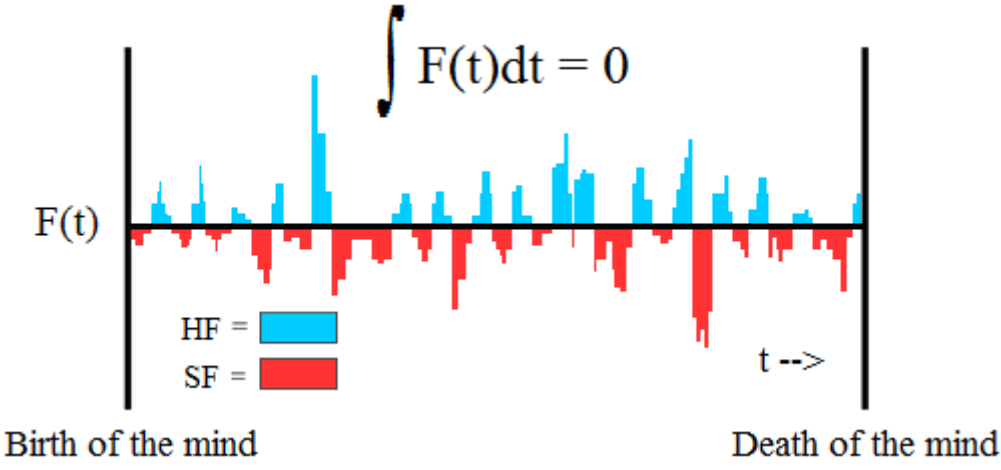
For accounting purposes, it seems that feelings would somehow have to be reduced to basic units of measurement for whatever is guaranteeing this law.

Conservation of Feelings Hypothesis

F(t) as the quantitative feeling function:F>0 corresponds to HF, F<0 corresponds to SF. Then the law is expressed as:

$$\int F(t)dt = 0$$

where the limits of the integral are from birth of the mind to death of the mind.



Each person has an equal ratio of happy feelings (HF) to sad feelings (SF) at the death of his or her mind.

(HF / SF = 1) at the death of the mind for every person.

All of the seemingly countless feelings of pleasure, pain, joy, and anger would need to be perfectly quantifiable. Each experience of joy would measure a unique combination of HF and SF. The moment your mind dies you will have an equal ratio of all the HF and SF you experienced throughout your life.

The total quantity of feelings experienced can vary. For the sake of example, I will quantify HF and SF. A rock star may die having experienced 1,000,000,000 units of HF and 1,000,000,000 units of SF. A monk may die having experienced 400,000,000 units of HF and 400,000,000 units of SF. However, a rock star can't die having experienced 1,000,000,000 units of HF and 1,234,884,848 units of SF.

It doesn't matter if a life exists for five minutes, or eighty-nine years… for life to be fair every life must die feeling neutral.

You can't base a person's entire life on only a part of his life. The entire life of a person must be considered when determining the validity of the conservation of feelings hypothesis. You must factor in all feelings experienced from the birth of a mind to the death of the mind.

The conservation of feelings hypothesis appears to be similar to the conservation of electrical charge hypothesis in that the statement of universal conservation of feelings (i.e., no net feelings can be added or subtracted from the universe, just as the statement of conservation of charge is no net electrical charge can be added or subtracted from the universe). Taken further, the law of conservation of charge dictates a charged particle cannot turn into photons or pure energy, only neutral particles or pairs of oppositely charged particles can do so. Similarly, the conservation of feelings hypothesis, as the law of conservation of feelings, dictates no person can have his mind die unless he is neutral with no surplus HF (happy feelings) or SF (sad feelings).

We all have our own unique life circumstances. Depending on those circumstances, there are only limited amounts of ways we can die feeling neutral. I label the ways to reach death as "paths," and each path represents a unique personality resulting from unique life experiences. Some paths are longer than other paths. If you take a longer path, the result will be a longer lifespan. Regardless of how long you live, you must die feeling neutral. Living longer does not provide more happiness than sadness.

Early on in life, some people find the motivation to experience surplus HF because later on in their lives they will experience surplus SF. Abusive relationships, natural disasters, physical disabilities, winning the lottery, finding true love, and accomplishing life goals, all existing to deliver the payload of pleasure or pain needed to die balanced.

Early life experiences skewed in either the HF or SF direction can affect the direction and intensity of later life experiences. For example, an early life of experienced sadness stemming from depression, anxiety, and fear, can ensure an equal ratio surplus of experienced happiness in later years. Alternatively, suffering from a terminal illness or other life-altering ailments, in the last few years of life, can be the result of the need to balance a person who experienced more HF than SF throughout a majority of life. At the onset, these examples may be difficult to comprehend as a reality of life, but are a living truth if the conservation of feelings hypothesis receives validation

If a person experiences HF, then she will become motivated, at some point, to do specific actions that will ultimately result in the experience of an equal ratio of SF.

There is no validated example of a person or other living organism dying with surplus happiness or sadness. No validation exists of a person surviving torture long enough to establish without a doubt he died with surplus happiness or sadness. It is true, up until this point, the scientific community has not attempted to test for this "law of fairness" or "conservation of feelings hypothesis." But in a world without this conservation law, we would be able to point to countless examples violating this hypothesis without a reasonable doubt. Pointing to a starving child, the holocaust, or a rape victim it would be easy to say…. "here is the proof," which would serve the notion that some people allow their feelings to compromise the integrity of science.

Although this hypothesis may appear insensitive, the challenge lies in analyzing the assumptions we take for granted.

There are many beliefs that are the source of conflict and division among humanity. We always think of peace and harmony as a goal, but maybe humanity needs seemingly unnecessary conflict to provide the negative stimulation required to have stable societies.

Religion has been used as a coping mechanism to deal with the pleasure and pain of life. Many people maintain beliefs that supply them with guilt when they indulge in pleasure. Many people need to believe they will reunite with a deceased loved-one in an after-life to cope with the pain. Our personalities revolve around a guarantee that all of our unique beliefs and ideas will uphold this conservation law.

If there is a law of fairness, religion has served as "training wheels" keeping human civilization intact. Many scientists believe adherence to a religion is the result of ignorance, but if a conservation law guarantees feeling balance, then religion plays a hard-science function in upholding this conservation law. Maybe we need religion to maintain societies and help many people cope with life.

One religion can be suited for one person, and a different religion can be more suitable for another person. The conservation of feelings hypothesis is plausible in a causally closed universe. The conservation of feelings hypothesis also resolves the problem of evil. Bad things have to happen, even to good people, in order to keep life fair.

When a religious person prays all night for an improbable, but favorable outcome to occur, and it occurs, it is reasonable to understand why he believes there must be some entity listening and creating miracles. However, is it possible that miracles are, in reality, the result of the laws of physics functioning normally and motivation compelling people to focus on improbable results?

We are all connected through our motivation. It is accurate to label motivation as a universal sense preventing living organisms from violating this conservation law!

People experience the motivation to perform specific actions because of the feelings that will result from those actions. Do you believe that by performing certain actions, the result will be a life filled with more happiness than sadness? How much control do you have over your own actions?

Love, fear, and addiction function to maintain the feeling balance in many people.

People do not have complete control over their motivation, but instead their motivation is subject to upholding a conservation of feelings. An inability to cope with an idea, removes a person's motivation to understand the idea or travel a path leading to this idea. If the conservation of feelings hypothesis is valid, our motivations guarantee we will cope with life circumstances.

Even if the scientific community invalidates a specific belief, if people depend on this belief to cope with life, they will find the motivation and selective evidence to support this belief.

Life is impartial. A conservation law governing feelings could motivate you to be at a specific location where a rock is falling naturally, due to the laws of physics and, as a result, you have an emotional response to this rock falling. The emotional response in turn, creates a feeling response.

The strength of a person's motivation to adhere to a specific belief or faith depends on the feelings he will experience while following this belief or faith. If a person would be unable to uphold this conservation of feelings by rejecting non-empirical

backed beliefs, and only accepting empirical fact, then she would find no motivation to change her non-empirically backed beliefs for empirical fact.

Motivation forces people to change their beliefs regardless of their desires. Without full control over our motivations, we do not have what many people consider free will. However, as long as this conservation of feelings is upheld, brains allow humans to maintain their feeling balance in different ways. This is where human choice exists. Humans can choose from the multiple ways to die feeling neutral.

Believing it is possible to commit suicide is not the same as committing suicide. There is a difference between realism and reality. The seemingly random impulse to perform a specific action, not congruent with your normal character, is the product of motivation not completely under your control.

If you went to a desolate part of this world and lived similar to its native inhabitants, it is very possible you would experience sadness initially or, over time. However, to believe you will never adjust to the sadness, or never experience enough happiness, is an assumption. We cannot always predict our future feelings

to specific stimuli. People, for the most part, adjust to their surroundings to uphold this conservation law.

Even though it is scientifically supported that happier people live longer, these studies did not incorporate into their results the feelings that people experience throughout their entire lives. This is just one of the problems associated with the message delivered by studies which determine that happier people live longer. In addition, participants in research studies utilizing self-report instruments (e.g., questionnaires) may invoke selective memory, or may not want to reveal many meaningful details, thus rendering invalid results to such studies.

This hypothesis may seem immune from falsification, but there are other scientific ways to build a case for or against this conservation law. If the conservation of feelings hypothesis is valid, then the structure of life is unique and experimentation can test for this uniqueness.

No test to date proves that a living organism can sustain the experience of only pleasure/happiness or pain/sadness for the majority of its life. Research studies

show that most amputees are almost as happy as those who have never had a limb amputated; and non-lottery winners are almost as happy as those who have won the lottery. From these studies, there is room to support the claim that balancing feelings existed before, or will exist after the collection of data.

Some people report experiencing depression every day due to ailments, but do they experience sadness from all of the sources from which other people experience sadness? How much excess pleasure did they experience when they were younger? Just because you would be unable to cope in an environment, doesn't mean that everyone would be unable to cope in that environment.

By moving past misconceptions that taint our perceptions, we are able to see things how they really exist, and are able to make an opinion based on reality rather than assumption. What appears to be one person's heaven may actually be his hell.

Within the conservation of feelings hypothesis, the universe is fair because living matter is no better or worse off than non-living matter.

People search endlessly to get as much experienced happiness—or their perception of what experienced happiness is—into their lives. And, people do whatever they can to suppress or delay experienced sadness. Problems arise when people fail to realize there is NO free HF. The balancing SF could present itself all at once, or be broken up into smaller pieces and experienced at different points throughout life.

Choose wisely on how you want to experience happiness. Do not waste the sadness you worked so hard to accrue if you have goals that will make you happy. It may be beneficial if young adults knew that the pleasure experienced from drugs, tobacco, and sugar neutralizes the pain experienced from work or school.

Learning how to maintain feeling balance in a desired environment is central to staying in that environment. Some environments exist to provide people with one type of feeling because they experienced and/or will experience an equal amount of the opposite type of feeling in a different environment. The feeling balance of other people must also be upheld.

Accomplishing a goal generally causes a person to experience HF. Therefore, to accomplish a goal causing HF, a person has to experience SF by working hard, and/or has to experience a necessary amount of SF in the future, and/or had to experience, in the past, unbalanced SF. Without SF, there is no HF; balancing feelings exist in either the past and/or the future. The notion that a person will "miss out" on free happiness by passing up an opportunity to have fun is never true. Any HF experienced from fun will be neutralized by an equal ratio of SF, before the death of a person's mind. Failure to recognize this reality can result in the inability to accomplish future goals resulting in HF due to a lack of SF. The motto: "enjoy yourself because you never know when your life might end" is foolish. A person's life will not end if he is in a state of feeling imbalance. Constantly pursing immediate gratification may keep goals, which will make you happy, out of reach.

Many academics focus on the causal chain of events that led up to a disease, but the reason why the disease occurred deserves additional attention. This hypothesis proposes that the reason for suffering always comes down to upholding a conservation law. Scientists cannot accurately determine reason, so they look where the light shines (causal chain of events).

Analyzing feelings based on facial expressions or other behaviors and events may seem accurate, but may not be completely accurate. For example, a person who smiles is not necessarily experiencing HF; a person having sex may not necessarily be experiencing HF; a person with a knife in his leg, may not necessarily be experiencing SF. Types of feelings are not intrinsic to specific actions or activities. A seemingly crazy man who is screaming and running down the street, may not be experiencing SF or as much SF as you might believe.

With proper attention to the conservation of feelings hypothesis, we will gain more insight into the rules governing our lives.

There is a question of whether this conservation law is actually a law to which all organisms must conform, or, rather, simply a balance toward which every organism tends. The latter is considerably less controversial and probably more acceptable to the scientific community without specific technologies.

Many people believe that money will provide them with free happiness. However, if the conservation of feelings hypothesis is valid, this is not the case. The HF experienced from spending money must be neutralized by an equal amount of SF in connection with the money, or otherwise, before the death of mind. For example, if someone gave $100 million to a person, that money may enable her to experience surplus HF, but if she experiences surplus HF, from the money, then she will have to experience an equal surplus of SF at some point before death. She could experience this SF in the past and/or in the future.

While it is not true that money can bring free happiness, the belief that money can bring free happiness is a common trap that keeps people living in certain environments that will effectively ensure their feeling balance.

If the conservation of feelings hypothesis did not exist, by now humans would have found at least one lifestyle generally providing practitioners with more lifelong happiness than sadness. We have learned how to increase the average lifespan of humans, but we have not found a lifestyle that ensures surplus HF at the death of mind for a person, or for an average of people.

Requirements for a scientific law: A scientific law describes a relationship between its elements and must always apply under the same conditions. The law must be confirmed by repeated observations of its consequences under differing conditions consistent with its formulation and broadly agreed upon through the process of inductive reasoning. A law is a distillation of the results of many observations. As such, a law is limited in its applicability to circumstances resembling those already observed and is sometimes found to be false when extrapolated. A scientific theory is above all testable; that is, it makes specific testable predictions about what will be observed under certain conditions. Without this property, it is impossible to test a theory empirically.

Without an ability to reset all feelings in every experimental subject to the same level, it is currently impossible to apply the conservation of feelings hypothesis always to the exact same experimental conditions. Humans lack the technology to measure all of the feelings people experience before the death of mind. However, to claim we will never be able to measure feelings is an assumption many scholars would not agree with. The problem with the study of feelings and the current definition of scientific law is that without a way to perfectly measure feelings, no

theory on feelings can be a scientific law. Based on the definition of scientific law, any ideas on feelings can be nothing more than a hypothesis, theory, or set of ideas.

Even with an inability to quantify feelings perfectly, there are ways to scientifically test whether the conservation of feelings hypothesis is more than likely valid or invalid. The conservation of feelings hypothesis makes several testable (falsifiable) predictions. A main prediction is the mind of living organisms, with a surplus of HF or SF, cannot die. This is something quite possible for researchers to test once they pay adequate attention to formulating experiments with the purpose of testing for the conservation of feelings hypothesis. Two examples, of experiments to test this prediction of the conservation of feelings hypothesis, follow.

Experiment 1: Brain-activity patterns of 300 rat fetuses are monitored in utero using high-resolution brain imaging, as soon as brain-activity patterns become observable during gestation. At birth, these 300 rats are individually tagged, and then divided into three separate groups of 100 individuals each, while their brain-activity patterns and physiological profiles continue to be monitored, during both sleep and waking life. Especially in adult animals, states of pain and pleasure

display distinct activity signatures in specific anatomical regions of the brain. Levels of various neurochemicals and hormones — such as cortisol (called corticosterone in rats) — will provide further information about whether the rats are experiencing pain or pleasure.

Group 1 (Enriched-Environment Condition) rats are exposed to an enriched environment, with very pleasant living conditions and plenty of toys, food, and companions. Group 2 (Constant-Pain Condition) rats, as soon as they are born, have electrodes implanted in a number of muscles, such as jaw muscles. The electrodes are used to expose the rats to constant painful stimulation that is modest but is always slightly increasing in intensity throughout the life of the rat. Group 3 (Control Condition) rats are reared like typical lab rats. All the rats are then terminated after 30 days.

Prediction: The conservation of feelings hypothesis would predict that when the in utero brain-activity patterns are analyzed retrospectively, rats from each of the three different groups will be predicted to either (1) have very different patterns of in utero brain activity to balance the future differences in experienced happiness and

sadness by individual rats within these groups or (2) if in utero brain patterns of individuals in the Constant-Pain Condition are not significantly different from individuals in the Control Condition, we would expect to see physiological and brain-activity signatures for extended periods in the rats in the Constant-Pain Condition that indicate states of pleasure rather than the expected states of pain.

Outcome that would be non-supportive of the conservation of feelings hypothesis: The in utero brain patterns from the rats in the Enriched-Environment Condition are indistinguishable from those of the rats in the Constant-Pain Condition, and the physiological and brain-activity signatures in the rats in the Constant-Pain Condition indeed indicate a relatively constant experience of pain.

Experiment 2: Perform the Constant-Pain Condition on 300 rats. After 60 days, divide the rats into three groups. Group 1 (Lifetime Constant-Pain Condition): Maintain the pain condition for the entire life of the rats; Group 2 (Constant-Pain Enriched-Environment Constant-Pain Sequence Condition): After 60 days of the pain condition, shift the rats to an enriched environment, without inflicted pain, for 60 days. After this period of 60 days in the enriched environment, shift the rats

back to the pain condition; Group 3 (Constant-Pain Enriched-Environment Sequence Condition): After 60 days of pain condition, shift the rats to an enriched environment for the entire life of the rat.

Prediction: The conservation of feelings hypothesis would predict that the most survivors up to 60 days are in Group 3; fewer survivors in Group 2; and the fewest survivors in Group 1.

Outcome that would be non-supportive of the conservation of feelings hypothesis: There is the same rate of survival up to 60 days in all three groups.

Forcing extreme amounts of HF or SF on subjects and then observing the reactions before terminating the subjects seems to be a possible way to test for the conservation of feelings hypothesis. Questionnaires and self-report observations only take into account a fraction of research subjects' feelings and therefore cannot serve to validate or invalidate the conservation of feelings hypothesis.

Hopefully, there will be kinder ways to test this hypothesis.

There are large-enough gaps in our understanding about life and death to make way for the ideas introduced in this hypothesis. The conservation of feelings hypothesis also addresses the cookie-cutter gaps in our understanding of life.

The conservation of feelings hypothesis is compatible with the real world and explains why things occur in a specific way as opposed to appealing to luck or chance. For example, the currently accepted model of evolution invokes random changes in genetic makeup between generations as the source of variations in species giving rise to new and differing varieties, the fittest of which survive. The random changes in genetic makeup between generations are not random. Rather, they depend on a conservation of feelings.

We believe we have free will and full control over our thoughts, but in reality, we do not have full control over our thoughts. Control is a comforting feeling used as a coping mechanism to uphold this conservation of feelings in some people.

Human uncertainty exists to provide the wiggle room required to prevent a violation of this conservation of feelings.

Many people who die from a natural disaster or a nuclear explosion do not die instantly, but rather at different points in time after the disaster. In 10 seconds, 2 minutes, or 10 minutes, it seems plausible to experience enough of a type of feeling to die feeling neutral. However, the hypothesis contends that most people stay near balanced on a daily basis. If a person becomes balanced, that does not mean she will die.

You might be with a person sixteen hours a day, but there are still eight other hours in the day that may be filled with different strengths and durations of feelings. Moreover, how can you be completely certain of what feelings were experienced during those sixteen hours. Consider this: some people make it seem that their lives contain an abundance of happiness, but behind the scenes, these people experience, unknown to others, an abundance of sadness.

It is only an assumption that babies and small children do not have enough life experience to have true feelings. Babies and small children can experience feelings equal to their knowledge of life. It is also important to note that studies have shown fetuses have emotions while still in the womb.

The fact remains, one lifestyle works for one person and a dramatically different lifestyle works for another.

Governments, religions, habits, and all other unique aspects of every culture's lifestyle tailor to each participant's perception of feeling balance.

With the use of technology we are now capable of creating comparable lifestyles throughout the world. In the process, people are shedding their old sources of feelings for new sources of feelings. For example, some people may no longer experience HF from watching television because they experience HF from using the internet. The HF experienced from using the internet balances their SF.

For almost every person, the transition from child to adult involves shedding old sources of feelings for new sources of feelings and we call this "growing up." This transition does not only apply to changes in age, but to all lifestyle changes.

According to the conservation of feelings hypothesis [in theory] people should be able to prolong their lives indefinitely, by remaining unbalanced. In reality,

however, people cannot prolong their lives, indefinitely, because they will eventually lose the motivation to stay unbalanced. Humans do not have enough control over motivation to manipulate this conservation law. There is no way to "game the system."

Many people go from becoming devout followers of their religion to occasional followers of their religion or they change their religions altogether. People change their firm beliefs because other sources of feelings begin to replace the feeling function of their firm beliefs. The strength of a belief depends on the amount of surplus feelings it provides.

By manipulating a person's feeling balance you can change their beliefs, habits, and entire lifestyles.

Life is all about suffering in one area so we can experience pleasure in another area.

"The Goal of Science.-What? The ultimate goal of science is to create the most pleasure possible to man, and the least possible pain? But what if pleasure and pain should be so closely connected that he who *wants* the greatest possible amount of the one *must* also have the greatest possible amount of the other,-that he who wants to experience the "heavenly high jubilation," must also be ready to be "sorrowful unto death"? And it is so, perhaps! The Stoics at least believed it was so, and they were consistent when they wished to have the least possible pleasure, in order to have the least possible pain from life. (When one uses the expression: "The virtuous man is the happiest," is it as much the sign-board of the school for the masses, as a casuistic subtlety for the subtle.) At present also ye have still the choice: either the *least possible pain*, in short painlessness-and after all, socialists and politicians of all parties could not honorably promise more to their people,-or the *greatest possible amount of pain*, as the price of the growth of a fullness of refined delights and enjoyments rarely tasted hitherto! If ye decide for the former, if ye therefore want to depress and minimize man's capacity for pain, well, ye must depress and minimize his *capacity for enjoyment*. In fact, one can further the one as well as the other goal by *science*! Perhaps science is as yet best known by its capacity for depriving man of enjoyment, and making him colder, more statuesque, and more Stoical. But it might also turn out to be the *great pain-bringer*!-And then, perhaps, its counteracting force would be discovered simultaneously, its immense capacity for making new sidereal worlds of enjoyment beam forth!" - **Friedrich Nietzsche**